Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (original) A method for convolutionally encoding digital data for transmission over a communication channel, comprising the step of:

processing said data using one of a 64-state, rate 1/2 binary convolutional code (BCC) based on octal generators 133, 175 or a 256-state, rate 2/3 BCC based on octal generators

$$\begin{pmatrix} 21 & 02 & 12 \\ 10 & 25 & 12 \end{pmatrix}$$

to provide binary convolutional coded codewords.

Claim 2 (original) A method in accordance with claim 1 comprising the further step of:

scrambling said codewords prior to transmission over said communication channel.

Claim 3 (original) A method in accordance with claim 2 wherein said codewords are encoded jointly onto in-phase (I) and quadrature (Q) channels.

Claims 4-5 (cancelled)

Claim 15 (previously amended) A method in accordance with claim 2 the scrambling step comprising the further steps of:

mapping said codewords to a constellation according to a pseudo-random scramble sequence comprising bits having one of first and second binary valu s;

in the event a bit of the scramble sequence has said first binary value, maintaining said constellation in a current relationship with respect to constellation axes; and

in the event a bit of the scramble sequence has said second binary value, rotating said constellation.

Claim 16 (original) A method in accordance with claim 15, wherein said constellation is rotated counterclockwise in the event said bit of the scramble sequence has said second binary value.

Claim 17 (original) A method in accordance with claim 16, wherein said counterclockwise rotation comprises a ninety degree rotation.

Claim 6 (previously amended) A method in accordance with claim 15 wherein said scramble sequence is generated from a seed sequence 0011001110001011, where the first bit of the sequence in time is the left most bit.

Claim 7 (cancelled)

Claim 18 (original) Apparatus for encoding data for use in digital communications systems comprising:

a binary convolutional encoder for processing said data using one of a 64-state, rate 1/2 binary convolutional code (BCC) based on octal generators 133, 175 or a 256-state, rate 2/3 BCC based on octal generators

$$\begin{pmatrix} 21 & 02 & 12 \\ 10 & 25 & 12 \end{pmatrix}$$

to provide binary convolutional coded codewords.

Claim 8 (currently amended) Apparatus in accordance with claim 18, further comprising a scrambler coupled to the output of said encoder, wherein said scrambler is responsive to a scramble pattern generator.

Claim 9 (previously amended) Apparatus in accordance with claim 18 wherein said codewords are encoded jointly onto in-phase (I) and quadrature (Q) channels.

Claim 10 (previously amended) Apparatus in accordance with claim 18 wherein:
said codewords are mapped to a constellation according to a pseudo-random scramble sequence comprising bits having one of first and second binary values;
in the event a bit of the scramble sequence has said first binary value, maintaining said constellation in a current relationship with respect to constellation axes; and
in the event a bit of the scramble sequence has said second binary value, rotating said constellation.

Claim 11 (original) Apparatus in accordance with claim 10, wherein said constellation is rotated counterclockwise in the event said bit of the scramble sequence has said second binary value.

Claim 12 (original) Apparatus in accordance with claim 11, wherein said counterclockwise rotation comprises a ninety degree rotation.

Claims 13-14 (cancelled)

Claim 19 (cancelled)

Claim 20 (original) Apparatus in accordance with claim 18 further comprising a scrambler for scrambling codewords provided by said encoder prior to transmission over a communications channel.

Claim 21 (previously presented) A method for convolutionally encoding digital data for transmission over a communication channel, comprising the steps of:

encoding data to be communicated over a communication channel using a binary convolutional code to provide codewords; and

mapping said codewords to a constellation according to a pseudo-random scramble sequence comprising bits having one of first and second binary values;

in the event a bit of the scramble sequence has said first binary value, maintaining said constellation in a current relationship with respect to constellation axes; and

in the event a bit of the scramble sequence has said second binary value, rotating said constellation.